Department of Environment and Heritage Protection

EHP Financial Assurance Calculator

User guide

Great state. Great opportunity.

Queensland Government

Prepared by: Energy Regulation & Implementation, Department of Environment and Heritage Protection

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March 2014

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1.0 Introduction

Financial assurance (FA) is a type of financial security provided to the Queensland Government by the holder of an environmental authority (EA). FA may be required as a condition of an EA or a transitional environmental program (TEP) under the *Environmental Protection Act 1994* (EP Act).

FA provides the government with a financial security to cover any costs or expenses incurred in taking action to prevent or minimise environmental harm or rehabilitate or restore the environment, should the holder fail to meet their environmental obligations in the EA or TEP.

The Department of Environment and Heritage Protection (EHP) has developed a guideline on 'Financial assurance under the *Environmental Protection Act 1994'* (FA Guideline) which outlines the relevant legislative provisions, the circumstances when FA may be required, the form of FA, the approved calculation method, application requirements, decision making criteria and other matters such as lodging, changing, discharging or claiming FA.

To facilitate appropriate calculation of FA, EHP has developed two Microsoft Excel calculation tools (EHP FA calculators) which help to streamline the assessment of the EA FA requirement.

The FA Guideline and the FA calculators can be found on the Business and Industry Portal website <http://www.business.qld.gov.au/business/running/environment/licences-permits/financial-assurance-rehabilitation/financial-assurance-security-deposit>

The purpose of this user guide is to highlight some of the areas users may have difficulties with when trying to identify which activities they need to calculate FA for and to demonstrate how the EHP FA calculators can be used. The FA Guideline provides further information on financial assurance.

The user guide is broken into three sections:

- Generic calculator information – main concepts to keep in mind when using the EHP FA calculators and instructions on how to use generic and common spread sheets that collect basic information on the EA and the activities that are being calculated.
- EHP mining FA calculator – Instructions on how to enter data into mining specific spread sheets.
- EHP petroleum and gas FA calculator – Instructions on how to enter data into petroleum and gas specific spread sheets.

1.1 Installation

Upon opening the spread sheet a yellow button may appear at the top of the page asking the user to 'enable macros'. By clicking the button an introduction page will appear which provides a number of worksheet options and a link to the terms and conditions of use. Depending on what calculator you have opened the options shown in Figure 1 or Figure 2 will be available.

Figure 1: FA mining calculator options

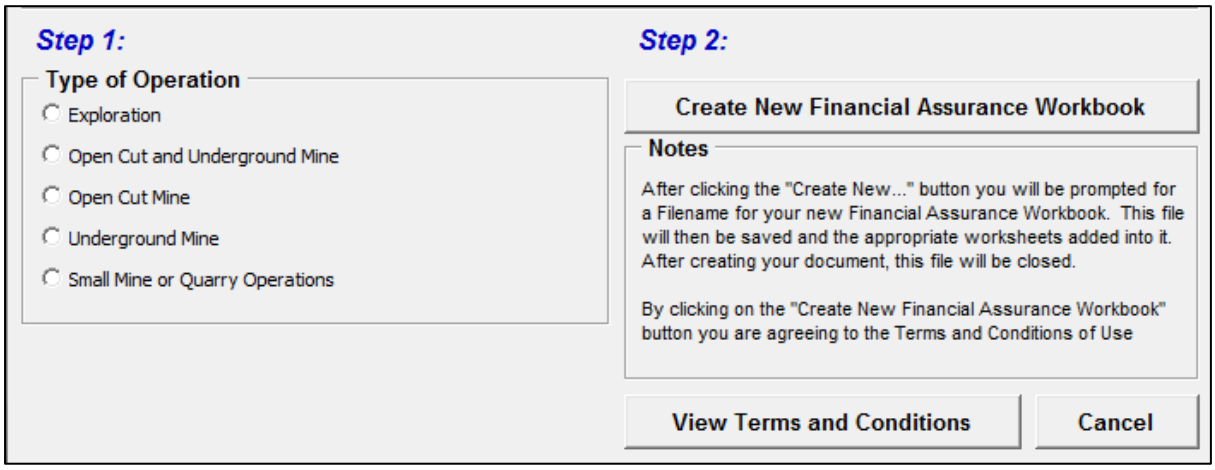
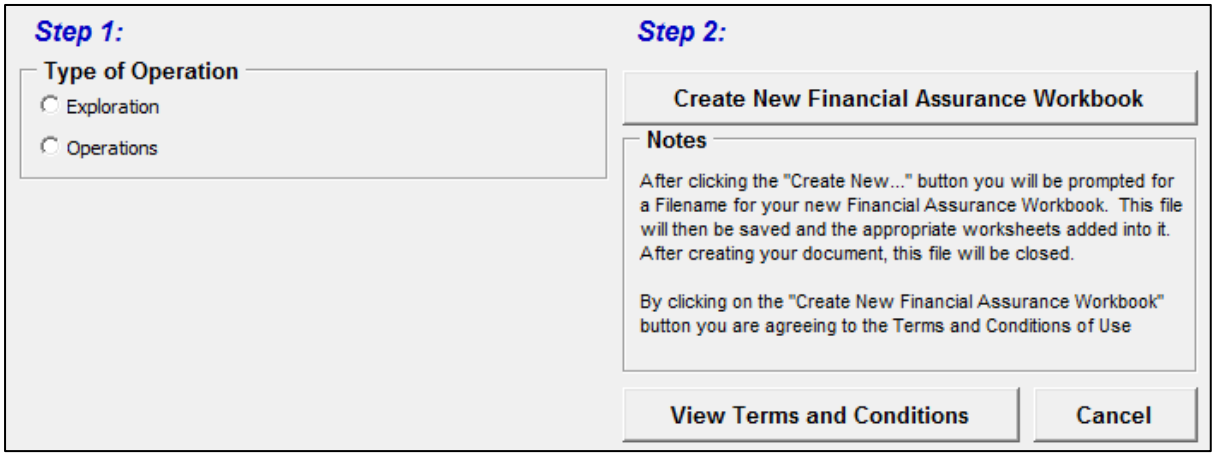

Step 1:
Type of Operation
Exploration
Open Cut and Underground Mine
Open Cut Mine
Underground Mine
Small Mine or Quarry Operations
Step 2:
Create New Financial Assurance Workbook
Notes
After clicking the "Create New..." button you will be prompted for a Filename for your new Financial Assurance Workbook. This file will then be saved and the appropriate worksheets added into it. After creating your document, this file will be closed.
By clicking on the "Create New Financial Assurance Workbook" button you are agreeing to the Terms and Conditions of Use
View Terms and Conditions
Cancel

Figure 2: FA petroleum and gas calculator options


Step 1:
Type of Operation
Exploration
Operations
Step 2:
Create New Financial Assurance Workbook
Notes
After clicking the "Create New..." button you will be prompted for a Filename for your new Financial Assurance Workbook. This file will then be saved and the appropriate worksheets added into it. After creating your document, this file will be closed.
By clicking on the "Create New Financial Assurance Workbook" button you are agreeing to the Terms and Conditions of Use
View Terms and Conditions
Cancel

Step 1: Select the type of operation that most closely corresponds to your site and the appropriate workbook will be automatically generated. Each workbook consists of several spread sheets.

Step 2: After clicking the 'create new financial assurance workbook' button you will be prompted to create a filename for the new workbook. The filename should include the EA number, the year the FA application is being submitted and the year within the period of FA for which the financial assurance is being calculated (for example 'EA1234567_2014_FAperiod_year1'). This file will then be saved and the appropriate spread sheets added into it. After creating your document, workbook will open.

Note: By clicking on the 'create new financial assurance workbook' button you are agreeing to the terms and conditions of use.

2.0 Generic calculator information

2.1 Key factors

During the piloting of the FA calculators a number of key issues or concerns arose that complicated or confused the user of the calculator. This section will outline key factors in calculating FA.

2.1.1 Year of maximum rehabilitation liability

If your EA requires FA you must have either a plan of operations or a nominated period of FA of 1-5 years. If the plan of operations or the period of FA is longer than one year the user must work out which year will have the maximum rehabilitation costs. You can, for example, do this by completing a table as per Table 1 below or by using the EHP Schedule of Disturbance templates which can be found on the Business and Industry Portal <http://www.business.qld.gov.au/business/running/environment/licences-permits/financial-assurance-rehabilitation/financial-assurance-security-deposit>. The rehabilitation costs should always be calculated as if the user was rehabilitating all disturbance caused to date on the EA (i.e. if the users company chose at the end of that year to cease all operations and begin rehabilitation of all disturbance).

Areas of new disturbance should be calculated at their full rehabilitation cost. Any existing areas of disturbance that have undergone a level of rehabilitation should have the cost of FA reduced. Once rehabilitation for an area has been completed and is subsequently only undergoing maintenance and monitoring the FA costs for this area can be reduced further. A 5% contingency is automatically calculated for maintenance and monitoring, however if an area of disturbance has been completely rehabilitated and only requires maintenance and monitoring then an actual cost amount must be allocated to that specific area of disturbance. At no point should an area of disturbance have a $0 value attributed to the maintenance and monitoring of its rehabilitation unless the area has been progressively certified, the FA Guideline provides further information on progressive certification.

The example in Table 1 demonstrates that because the operator has undertaken rehabilitation in years two and three, and has not created any further disturbance in year three, the year of maximum rehabilitation liability occurs in year two and the amount of FA required is $190,000. The user would need to submit the FA calculator workbook for year two.

Table 1: Example of calculating year of maximum rehabilitation liability

Plan of operations/ period of FA	Existing disturbance	Total new disturbance	Current rehabilitation area	Completed rehabilitation area	Total
Year 1	0	10ha	0	0	10ha
FA required	$0	$100,000	0	0	$100,000
Year 2	10ha	10ha	2ha	0	20ha (18ha + 2ha of rehabilitation)
FA required	$100,000	$100,000	-$10,000	0	$190,000
Year 3	20ha	0ha	2ha	2ha	20ha (16ha + 4ha of rehabilitation)
FA Required	$200,000	$0	-$10,000	-$15,000	$175,000

2.1.2 Calculate disturbance not activity

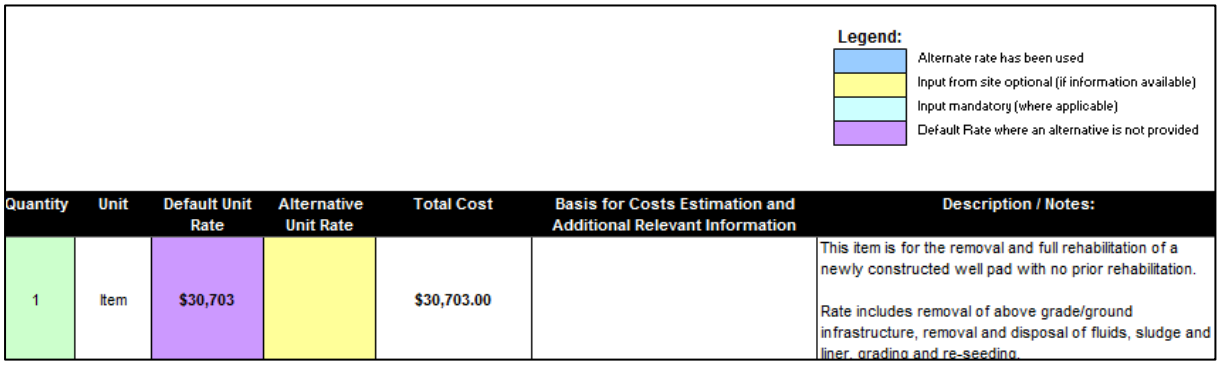
Disturbance rates entered into the calculator by the user are to be for the areas of land disturbance not the area of activity. For example seismic survey lines may have been 100km in length however only 1km of the line area required clearing/land disturbance (the user enters 1km not 100km).

2.1.3 Rates in the calculator

The rates used in the calculator have been calculated using third party costs by consultants and have included industry input. These rates include all necessary mobilisation and demobilisation of equipment costs except for where significant demolition equipment is needed (which has a separate and specific activity field).

Third party costs are appropriate because if FA is realised the government needs to arrange for someone else (e.g. a contractor) to do the work. However where a user can find a third party rate cheaper than the EHP calculator rate rate, the rate in the calculator can be changed. Any changes to the calculator rate, by writing a figure in the 'alternative unit rate' cell, triggers an adjoining cell within the calculator to highlight as blue, requiring the user to input a brief explanation as to why the rate was changed. When submitting the calculator spread sheets, justification for the changes must be included. During the assessment EHP may request a copy of the third party rate as proof.

Figure 3: Unchanged calculator rate

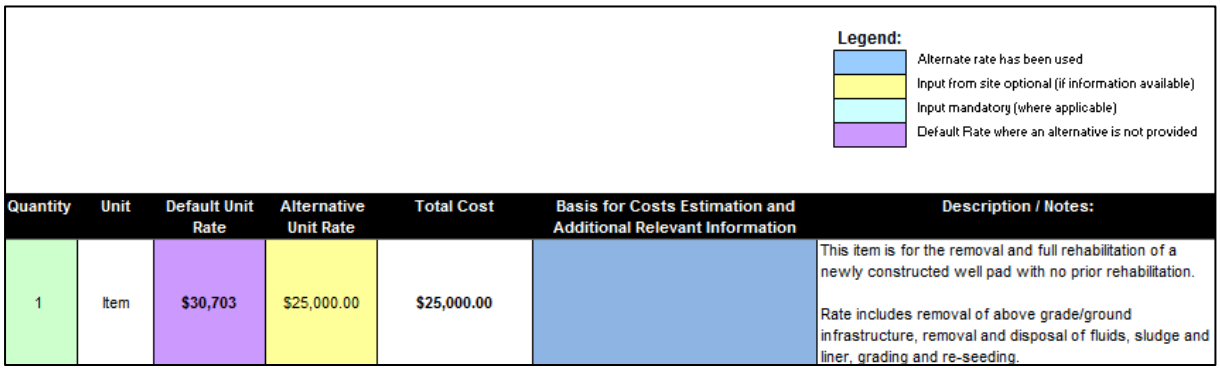


Legend:
Alternate rate has been used
Input from site optional (if information available)
Input mandatory (where applicable)
Default Rate where an alternative is not provided

Quantity	Unit	Default Unit Rate	Alternative Unit Rate	Total Cost	Basis for Costs Estimation and Additional Relevant Information	Description / Notes:
1	Item	$30,703		$30,703.00		This item is for the removal and full rehabilitation of a newly constructed well pad with no prior rehabilitation. Rate includes removal of above grade/ground infrastructure, removal and disposal of fluids, sludge and liner, grading and re-seeding.

Figure 3 demonstrates a calculation that has not changed the EHP FA calculator rate.

Figure 4: Changed calculator rate



Legend:
Alternate rate has been used
Input from site optional (if information available)
Input mandatory (where applicable)
Default Rate where an alternative is not provided

Quantity	Unit	Default Unit Rate	Alternative Unit Rate	Total Cost	Basis for Costs Estimation and Additional Relevant Information	Description / Notes:
1	Item	$30,703	$25,000.00	$25,000.00		This item is for the removal and full rehabilitation of a newly constructed well pad with no prior rehabilitation. Rate includes removal of above grade/ground infrastructure, removal and disposal of fluids, sludge and liner, grading and re-seeding.

Figure 4 demonstrates a calculation that has changed the EHP FA calculator rate by inputting a figure into the ‘alternative unit rate’ cell. Note the change in total cost and the following cell ‘basis for cost estimation and additional relevant information’ is now blue.

2.2 Common calculator tabs

This section explains the tabs (spread sheets) that the mining and petroleum and gas calculators have in common.

2.2.1 Terms and conditions tab

This tab outlines the basic terms and conditions that apply to the user of the FA calculator.

2.2.2 Registration tab

This tab provides fields for the user to input information specific to the EA for which the FA calculation will apply. The information entered into this tab will be transcribed automatically to the final ‘summary tab’.

2.2.3 Assumptions tab

The assumptions tab is available to list the reasoning behind why the activities calculated might not be considered normal, or why they have not been calculated (for example an access track has not been included in the calculation because the access track was progressively certified and a

landholder has agreed that the access track remains) the appropriate supporting information should be attached when submitted to EHP for approval.

2.2.4 Table of values tab

The user cannot change any fields within the ‘table of values’ tab. The rates have been outlined to provide transparency of data and to clearly identify and justify how the rates were calculated. If the user wants to use a different rate, the alternative rate is entered into a subsequent domain tab not in this tab.

2.2.5 Summary tab

The summary tab adds up all costs, including contingencies and GST to give the total estimated rehabilitation costs. When submitting an application to decide or amend the amount of FA the user should ensure the summary page is at the front of all other pages submitted, as this is the page the EHP officer will first inspect before reviewing the individual spread sheets.

3.0 Mining domain tabs

The mining FA calculator was developed with a similar design as the rehabilitation calculators developed by the New South Wales and Victorian State governments. The Queensland model however reflects the activities and costs associated with conducting rehabilitation activities in this state.

The domain tabs are the 'calculating' part of the FA calculator and it is in these tabs that the user must enter all information relevant to the rehabilitation work needing to be undertaken on the EA. The type of domain tabs will vary depending on which workbook the user has chosen to open.

Mining workbooks

When opening the EHP FA mining calculator the user will be presented an option to choose which type of mining workbook they want to open:

1. Exploration
2. Open cut and underground mine
3. Open cut mine
4. Underground mine
5. Small mine or quarry operation.

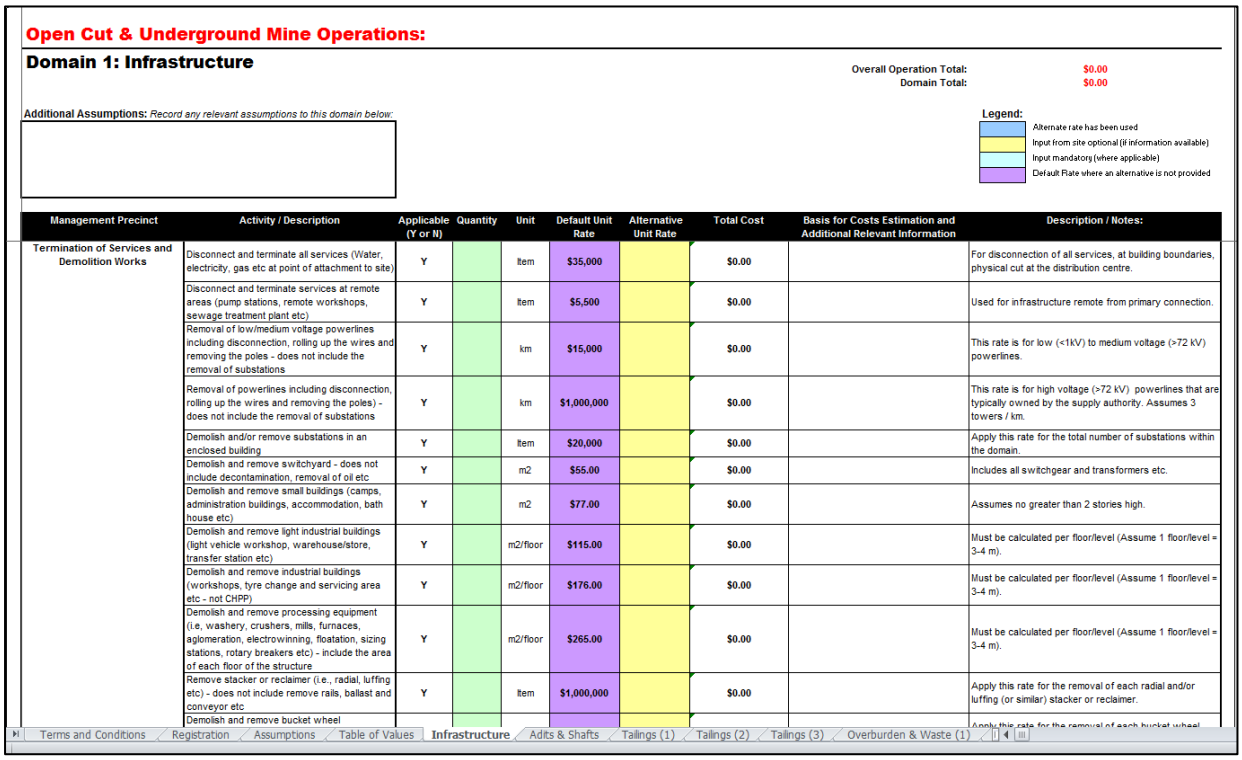
Note: Workbooks that are not mining exploration have an exploration management precinct for those EAs that are undertaking both exploration and operation activities.

Domain tabs

Once the user chooses the appropriate workbook they will be presented with the common calculator tabs and a number of the following domain calculator tabs:

1. Exploration tab
2. Infrastructure tab
3. Adits and shafts tab
4. Tailings tab
5. Overburden and waste tab
6. Water management tab
7. Pits tab
8. Other tab
9. Waste tab.

Figure 5: Example of mining domain tab



Open Cut & Underground Mine Operations:

Domain 1: Infrastructure

Overall Operation Total: $0.00
Domain Total: $0.00

Additional Assumptions: *Record any relevant assumptions to this domain below:*

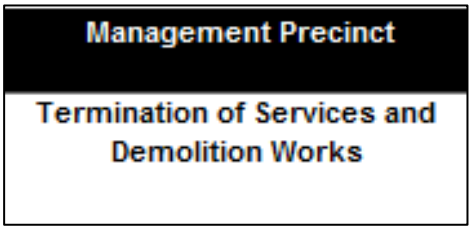
Legend:
- Alternate rate has been used
- Input from site optional (if information available)
- Input mandatory (where applicable)
- Default Rate where an alternative is not provided

Management Precinct	Activity / Description	Applicable (Y or N)	Quantity	Unit	Default Unit Rate	Alternative Unit Rate	Total Cost	Basis for Costs Estimation and Additional Relevant Information	Description / Notes:
Termination of Services and Demolition Works	Disconnect and terminate all services (Water, electricity, gas etc at point of attachment to site)	Y		Item	$35,000		$0.00		For disconnection of all services, at building boundaries, physical cut at the distribution centre.
	Disconnect and terminate services at remote areas (pump stations, remote workshops, sewage treatment plant etc)	Y		Item	$5,500		$0.00		Used for infrastructure remote from primary connection.
	Removal of low/medium voltage powerlines including disconnection, rolling up the wires and removing the poles - does not include the removal of substations	Y		km	$15,000		$0.00		This rate is for low (<1kV) to medium voltage (>72 kV) powerlines.
	Removal of powerlines including disconnection, rolling up the wires and removing the poles) - does not include the removal of substations	Y		km	$1,000,000		$0.00		This rate is for high voltage (>72 kV) powerlines that are typically owned by the supply authority. Assumes 3 towers / km.
	Demolish and/or remove substations in an enclosed building	Y		Item	$20,000		$0.00		Apply this rate for the total number of substations within the domain.
	Demolish and remove switchyard - does not include decontamination, removal of oil etc	Y		m2	$55.00		$0.00		Includes all switchgear and transformers etc.
	Demolish and remove small buildings (camps, administration buildings, accommodation, bath house etc)	Y		m2	$77.00		$0.00		Assumes no greater than 2 stories high.
	Demolish and remove light industrial buildings (light vehicle workshop, warehouse/store, transfer station etc)	Y		m2/floor	$115.00		$0.00		Must be calculated per floor/level (Assume 1 floor/level = 3-4 m).
	Demolish and remove industrial buildings (workshops, tyre change and servicing area etc - not CHPP)	Y		m2/floor	$176.00		$0.00		Must be calculated per floor/level (Assume 1 floor/level = 3-4 m).
	Demolish and remove processing equipment (i.e, washery, crushers, mills, furnaces, aglomeration, electrowinning, floatation, sizing stations, rotary breakers etc) - include the area of each floor of the structure	Y		m2/floor	$265.00		$0.00		Must be calculated per floor/level (Assume 1 floor/level = 3-4 m).
	Remove stacker or reclaimer (i.e., radial, luffing etc) - does not include remove rails, ballast and conveyor etc	Y		Item	$1,000,000		$0.00		Apply this rate for the removal of each radial and/or luffing (or similar) stacker or reclaimer.
	Demolish and remove bucket wheel								

Terms and Conditions | Registration | Assumptions | Table of Values | Infrastructure | Adits & Shafts | Tailings (1) | Tailings (2) | Tailings (3) | Overburden & Waste (1)

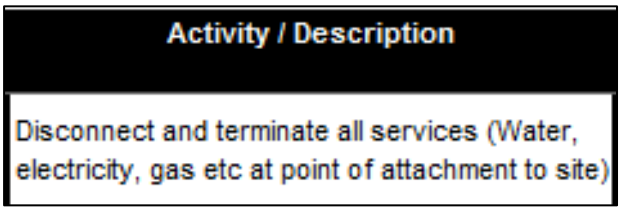
While the types of activities will vary depending on which tab is currently in use, the methodology of filling in the tabs is the same throughout the calculator. Below is an explanation of the different calculator fields.

Management precinct



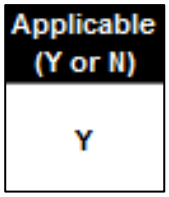
The management precinct field outlines the type of rehabilitation work being calculated. All rows to the right of this field relate to various activities specifically to this rehabilitation work.

Activity description



The activity description field provides a brief explanation about what specific rehabilitation work is being calculated

Applicable (Y or N)



The applicable field allows the user to identify whether or not the specific rehabilitation work needs to be calculated for the EA. The field is auto set to 'Y' so the user will need to change the field to 'N' if the work is not needed. By being auto set to 'Y' ensures EHP knows that the user has specifically chosen an option that means that the rehabilitation work is not needed onsite.

Note: Changing the field to 'N' results in the following 'Unit' field changing from green to white.

Quantity

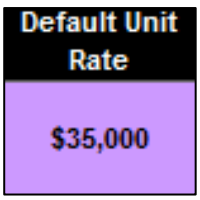
The quantity field is the first calculation field the user must enter data into. The quantity field is linked to the 'unit' field and requires the user to input how much rehabilitation work is needed. The user should enter how much of the specific rehabilitation work is required.

Note: If the quantity cell is white any number entered into the cell will be ignored by the calculator.

Unit

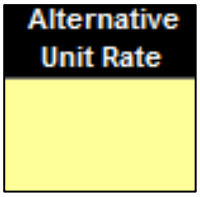
The unit field is directly linked to the quantity field and explains what metric the user is needing to calculate in regards to the rehabiltation work.

Default unit rate



The default unit rate field is automatically populated with rates embedded in the 'table of values' tab. To find out how the calculator came up with this figure view the 'justification and assumptions for rates' field in the table of values tab.

Alternative unit rate



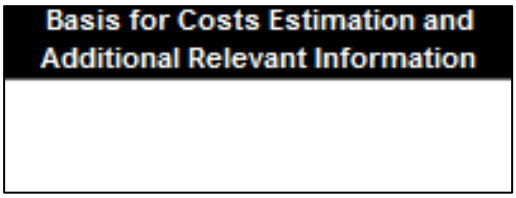
The alternative unit rate field allows the user to change the cost rate of rehabilitation. See section 2.1.3 for more information on using this field.

Note: Entering rates into this field will change the 'basis for costs estimation and additional relevant information' field to blue.

Total cost

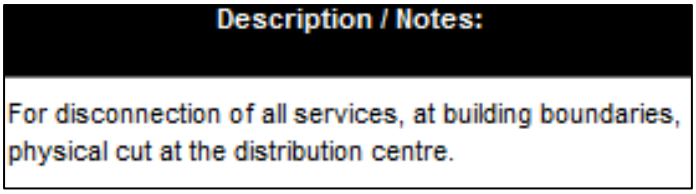
The total cost field is a basic calculation field. If the corresponding 'applicable' cell is 'Y' the value in the unit cell will be multiplied by the 'default unit rate' or the 'alternative unit rate' if one was entered.

Basis for costs estimation and additional relevant information



The purpose of the field is to provide space for the user to explain why an alternative unit rate was entered. Entering information in this field is only necessary when the cell is blue. The cell will be blue only if an alternative unit rate is entered.

Description/notes



The description/notes field provides an explanation on how the rehabilitation work is expected to be carried out. The default unit rate is based on the work outlined in this field. If the description includes activities that are not needed or alternatively it does not include an activity that is needed, the user should identify the appropriate cost for the varying activity and enter that cost in the alternative unit rate field.

4.0 Petroleum and gas aspect tabs

The petroleum and gas FA calculator was developed with a similar design as the mining rehabilitation calculators developed by the New South Wales and Victorian State governments. The Queensland model however reflects the activities and costs associated with conducting petroleum and gas specific rehabilitation activities in this state.

When opening the EHP FA petroleum and gas calculator the user will be presented an option to choose which type of petroleum and gas workbook they want to open:

1. Exploration
2. Operations.

Note: The operations workbook has an exploration tab for those EAs that are undertaking both activities.

Once the user chooses the appropriate workbook they will be presented with the common calculator tabs and a number of the following aspect calculator tabs:

1. Exploration tab
2. Development area tab
3. Infrastructure tab
4. Tailings tab
5. Water management tab
6. Pipeline rehabilitation tab.

While the aspect tabs differ to the mining domain tabs, the process of entering data remains the same (see section 3.1 of the user guide on how to enter information into calculation tabs).

There is one significant difference between the two resource calculators. Because the disturbance for a well pad is generally consistent across all operators, EHP has provided a calculation method within the development area tab to help streamline FA calculation. The development area tab presents the user with two options:

Option 1

Figure 6: Option 1 calculating rehabilitation costs per well pad

Management Precinct	Activity / Description	Applicable (Y or N)	Quantity	Unit	Default Unit Rate
Option 1 for Rehabilitation of Well Pads Using an All-inclusive Rehabilitation Cost per Well Pad Only number of well pads required	Full rehabilitation of well pad (single well)	Y		Item	$30,703
	Partial rehabilitation of well pad (single well)	Y		Item	$16,699
	Full rehabilitation of well pad (multiple wells)	Y		Item	$55,572
	Partial rehabilitation of well pad (multiple wells)	Y		Item	$30,358

Option 1 (see Figure 6 above) calculates the disturbance of the total well pads covered by the relevant calculator year by multiplying the number of well pads with a predetermined total cost of rehabilitation.

The user will be able to enter values for either single-well pads or multi-well pads. For each well pad type the user can choose to input the number of well pads that have either had no rehabilitation undertaken or have had some rehabilitation. Where numbers are entered for well pads that have had some rehabilitation it is the expectation of EHP that the well pad has been rehabilitated up to the point of fencing immediately surrounding the well. Essentially the rate given in the calculator is for the well shut in costs, the removal of all surface infrastructure and rehabilitation of the surrounding surface area.

Note: EHP does not require plug and abandoning and pipeline decommissioning costs to be included in the calculation of FA however these activities are required by the Department of Natural Resources and Mines to have been completed prior to the relinquishment or surrender of your tenure under the *Petroleum and Gas (Production and Safety) Act 2004*.

Option 2

Figure 7: Option 2 calculating rehabilitation costs per rehabilitation activity

Management Precinct	Activity / Description	Applicable (Y or N)	Quantity	Unit	Default Unit Rate
Option 2 for Rehabilitation of Wells Using Rehabilitation Cost per Area of Disturbance (for situations were Option 1 is NOT applicable)	Removal of the well head equipment and other associated small infrastructure	Y		m2	$77.00
	Source, cart and spread suitable cover material (@ 0.2 m) (Select Haul Distance from List)	Y		m3	Select from List
	Trim, rock rake & deep rip (includes levelling / landscaping and rip in 1 direction) - includes hardstand and laydown areas	Y		ha	$990.00
	Source, cart and spread topsoil (@ 0.2 m) (Select Haul Distance from List)	Y		m3	Select from List
	Soil amelioration - gypsum/lime, etc	Y		ha	$250.00
	Direct seeding / fertiliser (pasture grass species) (depends on the commitment to rehabilitation)	Y		ha	$1,240

Option 2 (see Figure 7 above) can be used where the user prefers to calculate the rehabilitation work required by breaking the work down to the individual components (in a similar way as other aspects of rehabilitation have been calculated).

5.0 Submitting your FA calculator

When making an application for a decision on you FA you will need to submit the following information:

1. A copy of your EHP FA calculator workbook. You must submit the whole workbook file not just a copy of the summary sheet.
2. If your plan of operations or period of FA is longer than one year you will need to submit additional information to support why you have chosen the year that was calculated as the year of maximum disturbance. This could be as simple as the table outlined 2.1.1 or by using the EHP Schedule of Disturbance templates which can be found on the Business and Industry Portal <http://www.business.qld.gov.au/business/running/environment/licences-permits/financial-assurance-rehabilitation/financial-assurance-security-deposit>
3. If your EA is not on a resource lease you will need to also submit a rehabilitation plan which outlines what rehabilitation work will be conducted during your period of FA. For more information on rehabilitation plans contact the relevant EHP regional office.